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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,904	05/11/2001	Scott J. Carter	VITLCOM.066A3	7612

33679 7590 12/18/2003

GE MEDICAL SYSTEM
C/O FOLEY & LARDNER
777 EAST WISCONSIN AVENUE
MILWAUKEE, WI 53202-5367

EXAMINER	
OROPEZA, FRANCES P	
ART UNIT	PAPER NUMBER
3762	

DATE MAILED: 12/18/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/853,904	CARTER ET AL.	
	Examiner	Art Unit	
	Frances P. Oropeza	3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/10/03 (Amendment)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *10* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. The Applicant's arguments filed 10/10/03 have been fully considered and are convincing. The rejections of record are withdrawn and a new grounds of rejection is established in the subsequent paragraphs.

Claim Rejections - 35 USC § 103

2. Claims 12, 13, 17-21, 23, 25, 27, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hafner (US 5333617) in view of Schulman et al. (US 4223679) and further in view of Skahill et al. (US 6121940).

Hafner discloses a cardiac monitoring method including an ECG telemetry transmitter (10) and a lead set (37-41) (figure 1). Hafner teaches the receiver (13) chooses the antenna based on signal strength (col. 11 @ 32-36). Absent any teachings of criticality or unexpected results, associating the choice of the lead(s) function with the telemetry unit would be an obvious design choice.

As to claims 1, 3, 11, 12 and 17, the shields of the leads are the antenna (col. 4 @ 23-29).

As to claims 9 and 23, the telemetry unit is a unidirectional transmitter unit (col. 11 @ 28-32).

As to claims 4, 5, 6, 18-20 and 30, a single antenna is chosen from multiple antennas, the multiple antennas providing antenna diversity (col. 11 @ 32-36).

Hafner discloses the claimed invention except for the telemetry unit containing an impedance detector to monitor the impedance of the antenna and a dynamic impedance matching circuit responsive to the impedance changes.

Schulman et al. teach telemetry systems for implanted stimulation devices using an impedance reflecting circuit (14) for the purpose of detecting the impedance of the antenna/ inductor in the impedance reflecting circuit and modulating the frequency of the signal based on the impedance found between the implanted device (10) and the external programmer (12). It would have been obvious to one having ordinary skill in the art at the time of the invention to have used an impedance reflecting circuit in the modified Hafner system in order to minimize the power usage of the implanted device during telemetry operations (abstract; figure 1; col. 2 @ 41 – col. 3 @ 24; col. 5 @ 8-29).

Modified Hafner discloses the claimed invention except for the telemetry unit containing a dynamic impedance matching circuit responsive to the impedance changes.

Skahill et al. teaches matching signals from small antennas using a dynamic impedance transformer circuit to achieving broadband impedance matching for the purpose of achieving maximum power transfer. It would have been obvious to one having ordinary skill in the art at the time of the invention to have used a dynamic impedance transformer circuit in the modified Hafner system in order to minimize the signal reflections, optimizing the signal transfer (abstract; col.. 1 @ 5-43).

3. Claims 1-7, 9 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hafner (US 5333617) in view of Schulman et al. (US 4223679) and further in view of Skahill et al. (US 6121940) and further in view of Hesen (US 3631851). As discussed in paragraph 2 of this action, modified Hafner discloses the claimed invention except for a detachable lead set with a lead set connector.

Hesen teaches lead set attachment using a lead set connector (12) for the purpose of connecting multiple electrodes to a diagnostic electrocardiogram machine (col. 2 @ 31-34). It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the lead set connector in the modified Hafner system in order to provide valid electrocardiogram signals with minimal noise so an accurate diagnosis is established (col. 1 @ 8-24 and 54-58; col. 1 @ 73 – col. 2 @ 4).

4. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hafner (US 5333617) in view of Schulman et al. (US 4223679) and further in view of Skahill et al. (US 6121940) and further in view of Hesen (US 3631851) and further in view of Flach et al. (US 5748103). As discussed in paragraphs 2 and 3 of this action, modified Hafner discloses the claimed invention except for:

- the telemetry unit being an ambulatory telemetry unit (claim 8), and
- the telemetry unit being a transceiver unit (claim 10).

As related to the single-lead and the ambulatory unit, Flach et al. teach data transmission using a single-lead antenna to provide a light-weight design for the telemetry unit enabling patient ambulation so that the patient has freedom of movement while being monitored

(col. 5 @ 66 – col. 6 @ 6). It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the ambulatory telemetry unit with single-lead antenna in the modified Hafner system in order to permit patient mobility while collecting physiological data in a central location for review and response, as needed, by clinicians (col. 1 @ 18-39).

As related to the transceiver, Flach et al. teach data transmission using a transceiver for the purpose enabling bi-directional communication between the telemetry unit and the central monitoring location. It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the transceiver in the modified Hafner system in order to enable the central location to use time slots to monitor and communicate with multiple telemetry units and to make control changes, as needed, in the telemetry units (col. 3 @ 4-26).

5. Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hafner (US 5333617) in view of Schulman et al. (US 4223679) and further in view of Skahill et al. (US 6121940) and further in view of Flach et al. (US 5748103). As discussed in paragraph 2 of this action, modified Hafner discloses the claimed invention except for:

- the telemetry unit being an ambulatory telemetry unit (claim 22), and
- the telemetry unit being a transceiver unit (claim 24).

As related to the single-lead and the ambulatory unit, Flach et al. teach data transmission using a single-lead antenna to provide a light-weight design for the telemetry unit enabling patient ambulation so that the patient has freedom of movement while being monitored (col. 5 @ 66 – col. 6 @ 6). It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the ambulatory telemetry unit with single-lead antenna in

the modified Hafner system in order to permit patient mobility while collecting physiological data in a central location for review and response, as needed, by clinicians (col. 1 @ 18-39).

As related to the transceiver, Flach et al. teach data transmission using a transceiver for the purpose enabling bi-directional communication between the telemetry unit and the central monitoring location. It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the transceiver in the modified Hafner system in order to enable the central location to use time slots to monitor and communicate with multiple telemetry units and to make control changes, as needed, in the telemetry units (col. 3 @ 4-26).

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hafner (US 5333617) in view of Schulman et al. (US 4223679) and further in view of Skahill et al. (US 6121940) and further in view of Unger et al. (US 5694940). As discussed in paragraph 2 of this action, modified Hafner discloses the claimed invention except for monitoring EEG, SpO2 and blood pressure data.

Unger et al. teach telemetric monitoring of physiological data using lead sets to transmit EEG, SpO2 and blood pressure data for the purpose of gathering and monitoring clinically significant data. It would have been obvious to one having ordinary skill in the art at the time of the invention to have monitored EEG, SpO2 and blood pressure data in the modified Hafner system in order to collect and distribute significant physiological data signals so a patient's condition can be monitored (col. 7 @ 9-14; col. 1 @ 13-21; col. 2 @ 20-26).

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hafner (US 5333617) in view of Schulman et al. (US 4223679) and further in view of Skahill et al. (US 6121940) and further in view of Unger et al. (US 5694940). As discussed in paragraph 2 of this action, modified Hafner discloses the claimed invention except for monitoring EEG.

Unger et al. teach telemetric monitoring of physiological data using lead sets to transmit EEG data for the purpose of gathering and monitoring clinically significant data. It would have been obvious to one having ordinary skill in the art at the time of the invention to have monitored EEG data in the modified Hafner system in order to collect and distribute significant physiological data signals so a patient's condition can be monitored (col. 7 @ 9-14; col. 1 @ 13-21; col. 2 @ 20-26).

Statutory Basis

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Fran Oropeza, telephone number is (703) 605-4355. The Examiner can normally be reached on Monday – Thursday from 6 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Angela D. Sykes can be reached on (703) 308-5181. The fax phone number for the

organization where this application or proceeding is assigned is (703) 306-4520 for regular communication and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist, telephone number is (703) 308-0858.

Frances P. Oropeza
Patent Examiner
Art Unit 3762

FPO
11/18/03

Angela D. Sykes

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